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EXAMINER

HUBER, PAUL W

ART UNIT

PAPER NUMBER

2653

DATE MAILED: 05/31/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/985,767

Applicant(s)

CHUNG ET AL.

Examiner

Paul Huber

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 December 2004 and 02 February 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-54 is/are pending in the application.
- 4a) Of the above claim(s) 3-6, 9, 11, 12, 17, 19, 20, 22-36, 41-43, 48 and 50-52 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 7, 8, 13-16, 18, 21, 37-39, 44-47, 49, 53 and 54 is/are rejected.
- 7) ☒ Claim(s) 10 and 40 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 020205.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 2, 7, 8, 13, 15, 18, 21, 37-39, 44, 46, 49 and 53 are rejected under 35 U.S.C. 102(a) as being anticipated by the admitted Prior Art, as disclosed by the applicant in the specification on pages 2-4 in reference to figures 1-4.

The admitted Prior Art discloses an optical pickup, comprising: a light source 10 generating and emitting a light beam; an objective lens 17 focusing the light beam from the light source 10 to form a light beam on a recording medium 1; an optical path changer 11 disposed on an optical path between the light source 10 and the objective lens 17, altering a traveling path of the light beam incident on the recording medium 1; a light beam division and detection unit 25 dividing the incident light beam passed through the objective lens 17 and the optical path changer 11 after being reflected from the recording medium 1 into a first light beam portion A1 and a second light beam portion A2 around the first light beam portion A1, and detecting a first detection signal a1 and a second detection signal a2 from the first light beam portion A1 and the second light beam portion A2, respectively; and a thickness variation detection circuit detecting a variation in thickness of the recording medium 1 by subtracting the second detection signal a2 from the first detection signal a1 and outputting a thickness variation signal St' indicative thereof. See page 3, line 25 through page 4, line 8.

Regarding claims 15 & 46, the optical pickup further includes: a collimating lens 13 on the optical path between the light source 10 and the optical path changer 11 collimating the light beam, which is diverging, from the light source 10; and a sensing lens 19 on the optical path between the optical path changer 11 and the light beam division and detection unit 25 condensing the incident light beam. Note: since the optical path is defined by the light beam traveling from the light source 10, reflecting from the medium 1 and becoming incident again upon the optical path changer 11, the collimating lens 13 is on the optical path between the light source 10 and the optical path changer 11 as claimed.

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The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 14, 16, 45 and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted Prior Art, as disclosed by the applicant in the specification on pages 2-4 in reference to figures 1-4, as applied to the claims above, in further view of Matsuura (USP-6,510,111).

The admitted Prior Art discloses the invention as claimed, but fails to specifically teach that the optical path changer 11 is a beam splitter which transmits the light beam from the light source 10 and reflects the incident light beam reflected by the recording medium to the photodetector 25. Instead, the optical path changer 11 is a beam splitter which reflects the light beam from the light source 10 and transmits the incident light beam reflected by the recording medium to the photodetector 25. However, it is manifestly well known in the art of optical pickup devices as shown by Matsuura (see figure 1) that one can position the optical elements such that the beam splitter transmits the light beam from the light source and reflects the incident light beam reflected by the recording medium to the photodetector, for the purpose of design choice.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the admitted Prior Art such that the optical path changer 11 is a beam splitter which transmits the light beam from the light source 10 and reflects the incident light beam reflected by the recording medium to the photodetector 25, as claimed, well known in the art and as taught by Matsuura. A practitioner in the art would have been motivated to do this for the purpose of design choice.

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Claims 1, 2, 7, 8, 13, 14, 21, 37-39, 44, 45, 49 and 54 are rejected under 35 U.S.C. 102(a) as being anticipated by Matsuura (USP-6,510,111).

Matsuura discloses an optical pickup (see figures 1, 2 & 4), comprising: a light source 2 generating and emitting a light beam; an objective lens 6 focusing the light beam from the light source 2 to form a light beam on a recording medium 1; an optical path changer 4 disposed on an optical path between the light source 2 and the objective lens 6, altering a traveling path of the light beam incident on the recording medium 1; a light beam division and detection unit 11 dividing the incident light beam passed through the objective lens 6 and the optical path changer 4 after being reflected from the recording medium 1 into a first light beam portion ($A2 + B2 + A4 + B4$) and a second light beam portion ($A1 + B1 + A3 + B3$) around the first light beam portion, and detecting first and second detection signals from the first and second light beam portions; and a thickness variation detection circuit detecting a variation in thickness of the recording medium 1 by subtracting the second detection signal ($A1 + B1 + A3 + B3$) from the first detection signal ($A2 + B2 + A4 + B4$) and outputting a thickness variation signal THES indicative thereof. See col. 12, line 61 through col. 13, line 62.

Claims 10 and 40 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Applicant's arguments filed December 28, 2004 have been fully considered but they are not persuasive.

Regarding the rejection of claims 1, 2, 7, 8, 13, 15, 18, 21, 37-39, 44, 46, 49 and 53 in view of the admitted Prior Art FIGs. 1-4, the applicant argues that "picking two of the plurality of detection portions from the conventional optical pickup would not anticipate the claimed invention since the diagonal configurations are disclosed as being required to detect the thickness variation of the optical disc in the conventional optical pickup." The examiner respectfully disagrees. The admitted Prior Art of FIGs. 1-4 and specification pages 2-4 disclose each and every limitation claimed by the applicant in the above rejected claims. Specifically, claim 1 recites "a light beam division and detection unit dividing the incident light beam ... into a first light beam portion and a second light beam portion around the first light beam portion, and detecting first and second detection signals from the first and second light beam portions..." FIG. 4 discloses a light beam division and detection unit 25 as so claimed by applicant. The incident light beam is divided into a first light beam portion A1 and a second light beam portion A2 around the first light beam portion A1. Moreover, page 3 of the specification (admitted Prior Art) discloses that a first detection signal a1 and a second detection signal a2 are detected from the first light beam portion A1 and the second light beam

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portion A2, respectively.' Accordingly, the admitted Prior Art discloses the "light beam division and detection unit" as claimed. Claim 1 further recites "a thickness variation detection circuit detecting a variation in thickness of the recording medium by subtracting the second detection signal from the first detection signal..." Page 3 of the specification (admitted Prior Art) teaches that the thickness variation signal St' is determined by performing a subtraction of the second detection signal $a2$ from the first detection signal $a1$. Therefore, the admitted Prior Art, specifically the equation (3) shown on page 4, discloses "detecting a variation in thickness of the recording medium by subtracting the second detection signal from the first detection signal" as claimed. The thickness variation signal St' indicative of this subtraction, i.e., $a1-a2$, is then outputted. Since the admitted Prior Art discloses each and every limitation recited by the claims, the rejection is deemed proper and is maintained.

Regarding the rejection of claims 1, 2, 7, 8, 13, 14, 21, 37-39, 44, 45, 49 and 54 in view of Matsuura, the applicant argues that "the problem with the grouping suggested by the Office Action is that all of the 'A' light receiving portions are on the outer perimeter of all of the 'B' light receiving portions. Thus, the THES equation of Matsuura does not teach or suggest subtracting an outer light beam portion signal from the inner light beam portion as recited in each of the independent claims. Rather, Matsuura discloses mixing the signals from the inner ('B' light receiving portions) and outer ('A' light receiving portions) portions of two separate light receiving areas 11a and 11b and then subtracting to determine the thickness variation." The examiner respectfully disagrees. The examiner considers the light receiving areas A2, B2, A4 & B4 of the central third portion of the detection unit 11 to be sandwiched between light receiving areas A1 & B1 of the left third portion of the detection unit 11 and the light receiving areas A3 & B3 of the right third portion of the detection unit 11. In this regard, the detection unit 11 can be considered to be divided into a first light beam portion ($A2 + B2 + A4 + B4$) and a second light beam portion ($A1 + B1 + A3 + B3$) around the first light beam portion as claimed. Matsuura teaches in col. 13, line 55, that a variation in thickness of the recording medium (THES) is detected by subtracting the second detection signal corresponding to the second light beam portion ($A1 + B1 + A3 + B3$) from the first detection signal corresponding to the first light beam portion ($A2 + B2 + A4 + B4$) as claimed. Since the admitted Prior Art discloses each and every limitation recited by the claims, the rejection is deemed proper and is maintained.

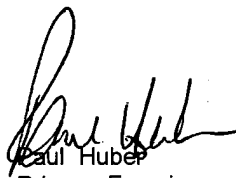
THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and

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the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication should be directed to Paul Huber at telephone number 571-272-7588.



Paul Huber
Primary Examiner
Art Unit 2653

pwh

May 26, 2005